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United States Department of Agriculture.

OFFICE OF EXPERIMENT STATIONS,

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CIVIL SERVICE IN THE DEPARTMENT OF AGRICULTURE.¹

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No apology is offered for coming before this association with a paper on our mutual business. The relations between the Association of Agricultural Colleges and Experiment Stations and the United States Department of Agriculture have always been quite intimate, and it is expected that this intimacy will increase from year to year. Through your agricultural experiment stations you are closely connected with the Department, whose scientific divisions constitute, in fact, a great central experiment station designed to assist and supplement your stations in many ways, while the Office of Experiment Stations acts as a clearing house for the results of their investigations. Hence our community of interest must be recognized by all.

It is believed, therefore, that as scientific men interested in the stability of the scientific policies of the Department of Agriculture and the permanency in their positions of its scientific experts you will be pleased to hear something, first of all, about the present condition of the classified service in this Department.

The Department of Agriculture, which has for its objects the discovery, exploration, development, and utilization of the agricultural resources of the country, is primarily a scientific and technical institution. It uses a number of business, administrative, and educational agencies, but its most important agencies are great scientific bureaus, divisions, and surveys. There are included in the Department the Weather Bureau and the Bureau of Animal Industry, two large bureaus, and 20 divisions, offices, or surveys. The Weather Bureau includes only 3 business offices, but has 6 technical divisions, 5 scientific experts engaged in research, with 154 observing stations and 52 signal stations along the coast and on the Great Lakes. The Bureau

¹An address delivered before the Association of American Agricultural Colleges and Experiment Stations at Washington, D. C., November 12, 1896, and made a part of the proceedings of that association.

of Animal Industry has only 2 business offices, with 152 technical stations engaged in meat inspection, quarantine work, etc., and 3 laboratories for investigating the diseases of animals. Of the remaining divisions in the Department only 5 are engaged in administrative business or the publication and distribution of documents, while 8 may be classed as technical and 7 are almost wholly engaged in scientific investigations or surveys of the country's resources.

A canvass of the rolls of the Department shows that about 1,000 out of the total of 2,217 employees are engaged upon scientific or technical work. An analysis of the last appropriation act shows that of the \$2,448,532 appropriated for the Department of Agriculture, not including the experiment stations, which receive \$720,000 additional, over \$1,750,000, or about 70 per cent, was appropriated for this scientific or technical work as distinguished from the administrative or general work.

We thus see that of all the Departments of the Government the Department of Agriculture has the least connection with political policy. There is thus no good reason for quadrennial rotation in office, except in the case of the heads of the Department, but every reason for the development of the most perfect system of civil service. It was eminently proper, therefore, that this should be the first Department to be completely included in this service. No other Department has as yet been brought so completely under civil-service rules.

It will be interesting to notice briefly the growth of the classified service in the Department during the past few years.

Growth of civil service in the Department of Agriculture.

Total number of persons in the Department of Agriculture, March 4, 1893	2,497
In the classified service	698
Excepted from competitive examination	80
Subject to noncompetitive examination	12
	92
Subject to competitive examination	606
Total number of employees November 1, 1896	2,217
In the classified service	1,658
Excepted from competitive examination	1
Subject to competitive examination	1,657

This shows an increase between March 4, 1893, and November 1, 1896, of 1,051 persons subject to competitive examination.

One of the first acts of the present Secretary was to have the position of the appointment clerk of the Department, who had served under the last Administration, put under the civil-service rules and made subject to competitive examination. Other places were brought in rapidly, until now the classified service includes all officers, clerks, and employees of the Department, including the Chief of the Bureau of Animal Industry, chiefs of divisions, superintendents, chiefs of offices, State statistical

agents and experts; in the Bureau of Animal Industry all superintendents of quarantine stations, inspectors, assistant inspectors, veterinary inspectors, microscopists, assistant microscopists, meat taggers, stock examiners and live-stock agents; in the Weather Bureau all professors, forecast officials, local forecasters, observers, and all other officers and clerks, all compositors, pressmen, folders, engineers, assistant engineers, firemen, messengers, assistant messengers, and watchmen. Messengers, watchmen, and others in subordinate grades can be promoted only after examination. The only persons above the grade of laborer not in the classified service in the Department of Agriculture at present are the Secretary, Assistant Secretary, and the Chief of the Weather Bureau, who are appointed by the President. The private secretary to the Secretary is the only person excepted from examination by the civil-service rules.

The 556 persons on the rolls of the Department outside the classified service on November 1, 1896, were in the subordinate grade as workmen, charwomen, etc. Most of these 556 are rainfall and river observers in the Weather Bureau, at salaries ranging from \$3 to \$25 per month, and their employment is intermittent. Every person ranking as a skilled laborer or skilled workman is now included in the classified service.

Three scientific divisions have been established in the Department during the administration of the present Secretary, and seven vacancies among the chiefs of scientific divisions have occurred by death and resignation. Notwithstanding the fact that none of these positions were at that time included in the classified service, those in the new divisions were filled by appointing gentlemen who had served the Department well under previous Administrations; five of the other vacancies were filled by promoting men already in the Department, and only two chiefs were appointed from outside.

Two appointments have been made by the President in the Department of Agriculture besides that of the Secretary, viz, the Assistant Secretary and Chief of the Weather Bureau. The office of Chief of the Weather Bureau was filled by promoting a professor (the highest scientific grade) in the Weather Bureau who, after twenty years' service, had attained that position through a competitive examination.

It will be seen from the foregoing statements that every chief of a bureau or division, except the Chief of the Weather Bureau, is now included in the classified service. The Secretary and Assistant Secretary being appointed by the President, are necessarily changed with every Administration. When this is done the Department is left for a time without a single experienced administrative officer to hold this vast system together. Two new secretaries come in, who necessarily have only a general knowledge of the workings of the Department. In practice this amounts to an interregnum of from six to twelve months; for it takes the new secretaries that length of time to master the subjects awaiting their attention, and in the meanwhile a great deal

of work stands still. It will be seen, thus, that the Department of Agriculture is a beautiful arch of civil service, lacking only a keystone to bind it together and perfect it.

What is needed is an administrative officer who can carry the work forward and give continuity to the policy of the Department. The Secretary of Agriculture has accordingly recommended to Congress to provide for the appointment of an additional officer, to be known as director in chief of scientific bureaus and investigations, who shall continue in office during good behavior, and perform such duties as the Secretary may assign to him.

The Department of Agriculture is now and must become more and more a training ground for scientific experts. The most serious criticism of its present organization is that it does not provide adequate compensation for its scientific investigators and the chiefs and assistant chiefs of divisions. The clerical force is relatively very well paid. A comparison with the salaries paid in commercial establishments will, I believe, show that the Government pays on the average from 10 to 30 per cent more for bookkeepers, copyists, stenographers, typewriters, and clerks than do the banks, railroads, insurance companies, and similar large corporations. The result is that there is a tremendous pressure to get into the clerical service of the Government. Relatively to the clerks and bookkeepers, the scientific assistants are not well paid, and the result is that there is a scramble to get out of the Government scientific service. This may be very well for the scientific men in the long run, but it is very bad for the Government. It appears, in short, to be the policy of the Government to encourage the ordinary clerk and copyist to come into the service and to stay in it just as long as possible. On the other hand, the history of the Department of Agriculture shows that it is unable to keep its best scientific investigators. The bright young men who are making reputation rapidly leave the Department to go to the colleges, universities, experiment stations, and even to manufacturing and other industrial corporations. It is not unusual for a man who receives from \$1,200 to \$1,400 in the Government scientific service to get an offer of a position with a salary of \$2,000 to \$3,000 in some manufacturing establishment. The Department of Agriculture has lost a large number of its very best men in this way during the last four years. The average age of 15 chiefs of the Department's most important scientific divisions is only 42 years and 3 months; the average age of the assistant chiefs of the same divisions is only 31 years and 4 months. The average term of service of the chiefs of these divisions in their present positions is only 6 years and 4 months, and of the assistant chiefs in their present positions only 2 years and 4 months.

For these reasons the Secretary will ask the next Congress to increase the compensation allowed for chiefs of scientific divisions and their assistants, making it more nearly equal that paid for the same grade of work in our best colleges and universities. Only in this way can the

Department hold some of the best men in the country in its leading positions.

Having thus arranged for the completion of the scientific and business staff of the Department as far as it is in our power to do so, we have addressed ourselves to the problem of providing an efficient method of promotion and advancement, filling vacancies and developing the service as circumstances require. Heretofore it has been customary to hold special examinations for eligibles to fill each particular position. Such irregular examinations have proven very unsatisfactory to the Civil Service Commission, to the Department of Agriculture, and to the candidates for the positions.

The objections to the plan of holding special examinations are numerous. The notices given by the Civil Service Commission are necessarily too short, and do not become widely known. Since we have no regular system of examinations, persons do not prepare themselves for the Government service as they do in Great Britain. It is eminently desirable that students should study and train systematically for this service. They will not do so unless they see a possible opening ahead of them and know the way to it. The whole business needs to be systematized, and the system of examinations and promotions to be explained to the scientific students of our institutions.

The questions for these special examinations are often too hastily prepared, and therefore too narrow. The examiner usually has the particular position in mind, and is apt to neglect the elements of a liberal education, requiring only the essentials of the science in which the man is to work. The result is we get too many amateur scientists or narrow specialists who have no breadth of education, and therefore no power to grow.

Under the existing rules the lists of eligibles provided by these examinations are only temporary, being designed to get one person to fill one place. In any case the list lives for only one year, and it is rather unusual when a second person is taken from an eligible list made up from the successful candidates taking these special examinations. This method, of course, offers very little encouragement to candidates. The special examinations are troublesome and expensive both to the Civil Service Commission and the Department, and while there is no reason for believing that serious irregularities have existed in the past, it is clear that special examinations might open the doors for great unfairness. One great objection to the system is that the Department does not always get the best men for the service; or if it does it has to drum them up and get them to stand the examination. This, of course, it should not have to do.

An illustration may make this somewhat clearer to those not familiar with the subject. The Department has, we will say, a vacancy in the Division of Botany. The Civil Service Commission arranges for a special examination in botany, modern languages, and a few other

subjects, to fill this vacancy, and announces it in a few newspapers which publish such notices gratuitously. Very few persons, relatively, hear of the examination at all. There will be from thirty to fifty applicants, of whom perhaps ten will pass the examination. Three of these will be certified. One is appointed, and the others are under the present rules not eligible for any other class of positions in the Department. After one year these eligibles are dropped, so that there is no chance for them to get a position on this examination. As a result of this the nine naturally conclude that the civil-service examinations are a great disappointment, and not worth taking.

For all its best work the Department needs men of broader scientific training than can be thus obtained. The ideal man for the more important positions in our service is the one who has had a liberal education, to which has been added general education in the natural sciences and special training and experience in some particular department of scientific work.

In order to secure a corps of such experts it is desirable to establish permanent lists of eligibles who have had the advantages, first, of a liberal education, and, second, of special scientific training in certain lines. It is also very desirable to give our assistants, before they are advanced to positions of responsibility, a longer period of apprenticeship in the various divisions and laboratories of this Department than that now provided. In this way they would have an opportunity to get the necessary special training, and the Department would have the opportunity to decide exactly what each man was best qualified to do.

As one of the leading scientific agencies of the Government, it is eminently desirable from every point of view that this Department should establish relations with the scientific institutions of the country, for the purpose of securing some of their graduates for its service, and encouraging young persons to prepare themselves for it. While our chief object must be to secure the ablest and best-trained persons for our branch of the public service, it is clearly our duty to do at the same time all we can to promote the interests of all the scientific institutions in the country by giving their graduates such opportunities for special training as may be offered in our various laboratories, and thus to develop a large corps of workers to serve the agricultural colleges, experiment stations, and other scientific institutions of the country.

For these reasons the Department has recently submitted to the Civil Service Commission a plan for establishing lists of eligibles suited to the requirements of the Department. In the past it has held some seventy or eighty different special examinations for special lists of eligibles, all of which lists have disappeared after one year. Under the plan here proposed it is sought, first, to systematize the examinations and reduce the number of lists of eligibles; and, in the second place, to give those persons who pass the examinations more opportunities for admission into the service, longer and better training in the lower positions, and a surer prospect of advancement if they deserve it. We

invite the special attention of college presidents, deans, and professors to the plan here proposed.

The classified service in the scientific and technical divisions of the Department of Agriculture may for present purposes be divided as follows:

(1) Clerical staff: Clerks, copyists, stenographers, typewriters, bookkeepers, etc. Salaries from \$720 to \$1,800.

The scientific corps comprises the following general classes:

(2) General or mechanical assistants in the scientific laboratories, now classified as "expert laborers," "messengers," "assistants," "storekeepers," etc. Salaries from \$600 to \$1,200.

(3) Technical assistants: Weather observers, draftsmen, microscopists, assistant microscopists, analytical chemists, botanists, entomologists, proofreaders, editors, translators, library clerks, etc. Salaries from \$600 to \$1,800.

(4) Scientific investigators: Assistant chiefs and chiefs of scientific divisions and bureaus. Salaries from \$1,600 to \$3,000. Salary of Chief of Bureau of Animal Industry is \$4,000.

It is now proposed that the Civil Service Commission hold regular examinations in May or June of each year at the chief educational or scientific centers, changing them from year to year so as to reach students of all the leading institutions, for securing eligibles for all places included in classes 2 and 3 above. It is thought that class 4, scientific investigators, can be filled by promoting persons who have shown distinguished ability while in classes 2 and 3, by special examinations, or examinations for promotion open to all workers in corresponding lines in class 3.

These examinations for the scientific positions in the Department of Agriculture should be of two kinds:

First. An examination for general assistants (class 2 above). The Department has a number of positions of a general character requiring persons with a liberal education and general scientific training. It is proposed to call all persons filling such positions simply "assistants." The examinations for such places should correspond, so far as the chief branches are concerned, to those required for graduation in the best colleges of agriculture, engineering, and technology, or for the bachelor's degree in the scientific courses of State universities. They should include especially the physiography, resources, and industrial features of our country. This examination should be framed so as to test the general ability and training of the candidate, rather than his technical knowledge of particular sciences. Those who pass it should be placed upon a list of general assistants, and be eligible for appointment to any of the above-described general positions, or to the minor positions in the scientific bureaus, such as those now called messenger, expert laborer, storekeeper, general assistant, etc., provided they wish them. The object of this examination is to afford the graduates of technical schools an opportunity to enter the Department, earn a living, and secure the time and the facilities for studying some special department of science which may qualify them for technical or advanced positions in the Department's service.

Candidates for positions as general assistants should be encouraged to take the examination for clerk-copyist, stenographer and typewriter, bookkeeper, translator, library clerk, draftsman, or any other of the regular examinations for the general departmental service. If they pass they should also be placed upon these lists, so that when the Department of Agriculture needs a bookkeeper, stenographer, artist, translator, or clerk of any kind it will have the privilege of taking one who has, in addition to these business qualifications, the scientific training which would qualify him for future advancement in the service of the Department.

Heretofore all the clerical staff (class 1 above) have been obtained from the regular lists of eligibles kept for all the Departments. Under the plan now proposed any eligibles for classes 2 and 3, who desire these positions and pass the special examinations required, shall be given the preference for all positions in class 1. That is, any person who has passed the examination for a scientific place under 2 or 3 shall, when he applies for it, have the preference for a clerical place if he has passed that examination also.

Graduates of agricultural colleges and technical schools would thus receive temporary employment in the minor positions of the Department, where they would have opportunities for observation and study which would fit them for better work. It is for the interest of both the Department and the candidates that all of these minor positions be filled by intelligent and interested students, who wish to study and advance themselves, rather than by persons who have no interest in the work of this Department and no ambition except to earn their bread and butter. The Department should fill every position in its service with young men and women who desire to qualify themselves for work in some department of science, and it believes that it owes it to the agricultural colleges and other scientific institutions to give their graduates the preference for every place in its service where they can serve to advantage.

Second. An examination for technical assistants (class 3 above) to be called "Assistant observer," "Assistant chemist," "Assistant botanist," etc. The object of this examination is to secure trained technical assistants for the different scientific bureaus and divisions of the Department, such as the Weather Bureau, the Bureau of Animal Industry, the Chemical Laboratory, the Division of Botany, the Biological Survey, the Division of Forestry, the Office of Experiment Stations, etc. The following is a partial list of such positions:

Weather observer,
Agricultural chemist,
Botanist,
Zoologist,
Entomologist,
Mycologist,
Vegetable physiologist and pathologist,

Bacteriologist,
Veterinarian,
Soil physicist,
Horticulturist,
Editorial assistant,
Forester,
Natural history artist, etc.

Examinations for these special positions should include the more important part of that prescribed for general assistant, and also a special paper in that department of natural science in which the appointee will have to work, having particular regard to its economic application. When required, it might include French, German, Latin, or any other language.

Candidates for the technical positions should be encouraged to take two or more of the special examinations and if successful should be placed upon each list of eligibles for which they pass. It often happens that the Department wants to secure scientific experts with a variety of different accomplishments. For example, it may wish an assistant with a fair working knowledge of two or three branches of natural history and having at the same time the ability to compile, compose, and edit copy in these branches. It is believed that many persons could take several of these examinations and thereby increase their chances of getting positions.

The higher places should be filled by promoting persons who have entered this class and served in it a sufficient time to acquire the necessary knowledge and skill. Under this plan it would rarely be necessary to hold special examinations for the higher positions.

It is hoped in this way to establish such relations with agricultural colleges, technical schools, and the scientific departments of the universities of the country, as will, on the one hand, secure for the Department a better class of employees, and on the other, open up avenues of advancement for all worthy students of science. It is hoped also that the other scientific bureaus and departments will adopt similar methods for securing scientific assistants, and thus make all the colleges training schools for the Government scientific service and its scientific service the means in turn of aiding and developing scientific teachers and workers for the colleges and universities. Such a system of examinations as is here proposed will form a connection between the educational institutions of the country and the Government service, much to the benefit of both.

It is believed that the plans here proposed are in full accord with sound principles of civil-service reform, and, what should be the same thing, with the laws of true intellectual and social development.

Many of you feel very deeply the need of a national university, and anxiously await the time when our statesmen shall make plans for its establishment. It is believed, however, that the true national university must be a growth or development, and can not be called into being by a fiat of Congress. With all the scientific positions in the Government service occupied, under the plan here proposed, by students of science, history, economics, and art, Washington would already be filled with both the body and spirit of a national university. When all our scientific laboratories are filled with graduates of technical schools and universities, striving while they serve the Government to discover

new truth and advance science, we will have a national university in fact, if not in name. A central organization, with its deans, registrars, etc., and a central building, with lecture halls for public instruction and examinations, will be all that is required to give form, as well as force, to this grandest dream of the Father of his Country and dearest hope of every patriot scholar.

With this will also come another much-needed improvement, viz, the better coordination of the work and a more intimate cooperation among the different scientific agencies of the Government which promote pure science or the development of the resources of the country. These agencies are now scattered, without plan or reason, through several of the Departments. There are twenty-five or thirty of them, organized at various times under different and often conflicting laws, which give rise to much duplication of work and consequent loss of time and money. Four or five thousand persons in all are employed in their service here and over the country, and \$7,000,000 or \$8,000,000 are expended by them annually. This great army of scientific workers needs to be better organized and to have its efforts better directed. The plan here outlined, if carried out in all the scientific bureaus, will promote all these most desirable ends.